

Remarks

In the Office Action of July 13, 2005, the Examiner rejected pending claims 1-17 and 19-21 under 35 U.S.C. § 103(a). Specifically, the Examiner rejected claims 1-9, 12-17, and 19-21 under 35 U.S.C. § 103(a) over U.S. Patent No. 6,697,873 to Yik et al. ("Yik") in view of U.S. Patent No. 6,810,037 to Kalapathy et al. ("Kalapathy"); rejected claim 10 under 35 U.S.C. § 103(a) over Yik and Kalapathy and further in view of U.S. Patent No. 6,732,184 to Merchant et al. ("Merchant"); and rejected claim 11 under 35 U.S.C. § 103(a) over Yik and Kalapathy and further in view of U.S. Patent Application Publication No. 2003/0026259 to Brown ("Brown").

Rejection of Claims 1-9, 12-17, and 19-21 In View of Yik and Kalapathy

Claim 1 is directed to a multiport switch that comprises a plurality of elements, including a plurality of receive ports, a plurality of transmit ports, the transmit ports configured to transmit frames in the packet-switched network, and an internal rules checking circuit. The internal rules checking circuit is coupled to the receive ports and is configured to determine frame forwarding information for the received frames. The internal rules checking circuit includes a plurality of address lookup tables, each of the address lookup tables including a plurality of addressable table entries for storing information relating to the frames and each of the addressable table entries including at least a vector field that identifies ports corresponding to the frames of the addressable table entries and an address field that identifies network addresses of the frames. Further, the internal rules checking circuit is configured to write to the addressable entries of

the plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables.

In rejecting claim 1 under 35 U.S.C. § 103(a), the Examiner concedes that Yik fails to explicitly disclose an internal rules checking circuit including a plurality of address lookup tables, in which the internal rules checking circuit is configured to write to the addressable entries of the plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables. (Office Action, page 3). For this feature, the Examiner relies on Kalapathy.

Applicants respectfully disagree with the Examiner's interpretation of Kalapathy. Kalapathy, as with Yik, does not disclose or suggest, as is recited in claim 1, a plurality of address lookup tables in which multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables.

Kalapathy is directed to a method for searching a table in a network switch. (Kalapathy, Abstract). According to Kalapathy, a method for searching a primary address table within a network switch includes the steps of dividing the primary address table into a first and second address sub-tables, storing even numbered memory address locations from the primary address table within the first address sub-table in sorted order, and storing odd numbered memory address locations from the primary address table within the second address sub-table in sorted order. (Kalapathy, Abstract). Figures 39, 40a, and 40b of Kalapathy, which are specifically pointed to by the Examiner in the Office Action,

illustrate this primary address table as a single address table 21 that is split into two half sized tables 211 and 212. (Kalapathy, Figures 39 and 40, and column 24, lines 10-41). As shown in Figure 40b, half sized table 211 includes the even address entries from table 21 and half sized table 212 includes the odd address entries from table 21.

Applicants submit that splitting a single address table into two address tables based on whether an address is odd or even, as disclosed by Kalapathy, is significantly different than, as is recited in claim 1, writing multiple entries having the same address to alternate ones of a plurality of address tables. In stark contrast, in Kalapathy, it appears that multiple entries that have the same address will always be written to the same address table. Accordingly, Kalapathy does not disclose, and in fact explicitly teaches away from, as is recited in claim 1, an internal rules checking circuit configured to write to the addressable entries of a plurality of address lookup tables such that multiple entries having the same address in the address tables are alternately written to different ones of the plurality of address lookup tables. As the Examiner concedes, Yik also does not disclose or suggest this feature of claim 1.

For at least this reason, Applicants submit that Yik and Kalapathy, even if combined as the Examiner suggests, do not disclose or suggest each of the features recited in claim 1. Accordingly, the rejection of claim 1 under 35 U.S.C. § 103(a) is improper and should be withdrawn. The rejection of dependent claims 2-6 should also be withdrawn, at least by virtue of the dependency of these claims from claim 1.

Independent claim 7 is directed to a method of using a lookup table

implemented with a first lookup sub-table and a second lookup sub-table. The method includes calculating a row address of the lookup table based on a hash value of a network address associated with an entry in the lookup table and storing the entry in one of the first sub-table and the second sub-table at the calculated row address by alternately storing multiple entries having identical calculated row addresses in the first and second sub-tables. The method further includes accessing the entries stored in the lookup table by simultaneously reading entries stored at a desired address in the first and second sub-tables.

Neither Yik nor Kalapathy, either alone or in combination, disclose or suggest the features recited in claim 7. For example, neither Yik nor Kalapathy disclose or suggest, as recited in claim 7, “storing the entry in one of the first sub-table and the second sub-table at the calculated row address by alternately storing multiple entries having identical calculated row addresses in the first and second sub-tables.” The Examiner concedes that Yik does not disclose this feature of claim 7, but contends that this feature of claim 7 is disclosed by Kalapathy and that one of ordinary skill in the art would have found it obvious to modify Yik in view of Kalapathy to obtain the features of claim 7. (Office Action, page 5).

Similar to the discussion above with regard to claim 1, Kalapathy does not disclose or suggest storing an entry in sub-tables by alternately storing multiple entries having identical calculated row addresses in first and second sub-tables, as is recited in claim 7. In contrast, in Kalapathy, multiple entries that have the same address will always be written to the same address table. Storing multiple entries that have a same address to a single address table cannot be said to

disclose or suggest alternately storing entries in first and second sub-tables.

Thus, Kalapathy does not cure the admitted deficiencies of Yik with regard to claim 7.

For at least these reasons, the rejection of claim 7 based on Yik and Kalapathy should be withdrawn. The rejection of claims 8, 9, 12, and 13 based on Yik and Kalapathy should also be withdrawn, at least by virtue of the dependency of these claims on claim 7.

Independent claim 14 and dependent claims 15-17 also stand rejected under 35 U.S.C. § 103(a) based on Yik and Kalapathy.

Claim 14 is directed to a method of storing information in a lookup table implemented as first and second sub-tables. The method includes calculating a first row address at which the information is to be stored and determining to store the information in the first sub-table when a previous entry at the first row address was stored in the second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table. The method further includes storing the information in the determined sub-table in the first available entry at the first row address as a table entry.

In rejecting claim 14, the Examiner concedes that Yik does not disclose “determining to store the information in the first sub-table when a previous entry at the first row address was stored in the second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table,” but contends that it would have been obvious to modify Yik in view of Kalapathy to include this feature. (Office

Action, page 6). Again, Applicants respectfully disagree with the Examiner's interpretation of Kalapathy. As mentioned above, for any particular address, Kalapathy explicitly discloses always storing that entry in the same table. Specifically, Kalapathy always stores even address entries in one sub-table and odd address entries in another sub-table. Accordingly, Kalapathy cannot be said to disclose or suggest, as is recited in claim 14, determining to store the information in a first sub-table when a previous entry at the first row address was stored in a second sub-table and determining to store the information in the second sub-table when the previous entry at the first row address was stored in the first sub-table. Thus, Kalapathy does not cure the admitted deficiencies of Yik with regard to claim 14.

For at least these reasons, the rejection of claim 14 based on Yik and Kalapathy should be withdrawn. The rejection of claims 15-17 based on Yik and Kalapathy should also be withdrawn, at least by virtue of the dependency of these claims on claim 14.

Independent claim 19 and its dependent claims 20 and 21 also stand rejected under 35 U.S.C. § 103(a) based on Yik and Kalapathy.

Claim 19 is directed to a multiport switch that comprises, among other things, "a logic device configured to alternately write addressable table entries for a particular table address to the plurality of address tables." Based on rationale similar to that given above, Applicants submit that neither Yik nor Kalapathy, either alone or in combination, disclose or suggest the features of this claim. Specifically, as discussed above, Kalapathy does not disclose or suggest alternately writing addressable table entries for a particular table address to a

plurality of address tables. Instead, Kalapathy explicitly discloses writing to a first sub-table when a table address is even and writing to a second sub-table when a table address is odd. Accordingly, the rejection of claim 19, as well as the rejections of dependent claims 20 and 21 are improper and should be withdrawn.

*Rejection of Claim 10
In View of Yik, Kalapathy, and Merchant*

Dependent claim 10 stands rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, and Merchant. Applicants submit that Merchant does not disclose or suggest the deficiencies of Yik and Kalapathy, as previously discussed, with regard to claims 7 and 8, from which claim 10 depends.

Additionally, Applicants submit that a rejection based on Merchant is not a proper rejection under 35 U.S.C. § 103(a), as Merchant does not qualify as prior art under 35 U.S.C. § 103(a). 35 U.S.C. § 103(c) qualifies 35 U.S.C. § 103(a) and states:

(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

(35 U.S.C. § 103(c)). Merchant qualifies as prior art under 35 U.S.C. § 102 only under subsection (e), and Merchant and the pending application are both assigned to Advanced Micro Devices, Inc. Accordingly, Merchant is not available to preclude patentability under 35 U.S.C. § 103(a).

For at least these reasons, Applicants submit that the rejection of claim 10

is improper and should be withdrawn.

*Rejection of Claim 11
In View of Yik, Kalapathy, and Brown*

Dependent claim 11 stands rejected under 35 U.S.C. § 103(a) based on Yik, Kalapathy, and Brown. Applicants have reviewed Brown, and submit that Brown does not cure the above mentioned deficiencies of Yik and Kalapathy. Accordingly, the rejection of claim 11 should be withdrawn.

Conclusion

In view of the foregoing remarks, Applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,
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